AMENDMENTS TO THE DRAWINGS:

The attached sheets of drawings include an amendment to FIG. 1. This sheet, which includes FIG. 1, replaces the original sheet including FIG. 1. A marked copy of amended FIG. 1 is also enclosed. An entire set of replacement drawings are being submitted for the convenience of the Patent Office.

HAYES SOLOWAY P.C.
3450 E. SUNRISE DRIVE,
SUITE 140
TUCSON, AZ 85718
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

REMARKS

The specification has been amended to correct obvious clerical errors and to employ more idiomatic English. No new matter has been entered.

The drawings have been amended to conform to the specification.

The claims have been amended to better define the claimed invention and to better distinguish the claimed invention from the prior art. More particularly, independent claim 1 has been amended to incorporate the limitations of claim 2, which has been cancelled. New claims 3 and 4 have been added to further scope the invention It is submitted that claim 1, as amended, and new claims 3 and 4, are patentably distinguished from the prior art.

In the Action, the Examiner takes the position that the feature "a feedback unit which computes an error between the blood flow velocity obtained by said analysis processing unit and the blood flow velocity obtained by said simulation unit to feed back the error to said simulation unit" as required by claim 1 is shown in Charbel et al. More particularly, the Examiner refers to Charbel et al., column 17, line 55 - column 18, line 5 for this teaching. Actually, Charbel et al., at column 17, lines 58 - column 18, line 6 teaches:

> "The present invention is a refined model that is capable of being adapted to specific patients. Once the volume flow of blood in certain arteries of a given patient has been determined, the model's terminal resistance pattern is determined for that patient.
> Deviations of the arterial structure of the blood supply of the patient's brain from the general model are identified from the angiograms. An x-ray angiogram (XR angiogram) of the patient's brain is used to determine the diameter of the blood vessels. Phase contrast Magnetic Resonance imaging angiography (MR angiography) is then used to determine an actual blood flow in critical arteries in the brain. Missing or additional arterial segments may be identified and used to adjust the model. A knowledge of the actual arterial structure and actual blood flows can be used to customize the model to the actual patient."

Clearly there is no discussion of feedback of the blood flow velocity in the above quoted passage.

HAYES SOLOWAY P.C.
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FAX. 520.882.7643

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Indeed, the description in column 17, line 58 - column 18, line 6 (written above) actually corresponds to "adapting the simulation to substantially conform to a specific arterial anatomy of the living subject" of claim 1 of Charbel et al., or the "means for adapting the model of the arterial network to substantially conform to a specific arterial anatomy of the living subject" of claim 9 of Charbel et al.

According to Charbel et al., "the simulation of the arterial network includes a one-dimensional, explicit, finite difference algorithm based upon a conservation of mass equation, a Navier-Stokes momentum equation, and an equation of state relating local pressure to local artery size" (see claim 6 or 15, and also see column 24, lines 25-31).

In the present claimed invention, the simulation unit "feeds back error to a sufficiently large number of representative points which are distributed over the blood flow domain in said computational lattices of said simulation unit".

This feedback is possible in the present invention because the simulation of present invention is two-dimensional or three-dimensional. (See Equation 11 and Equation 12 and claims 3 and 4).

In Charbel et al., "(a) measuring blood flows in the living subject corresponding to the primary input flows of the sectors; (b) adjusting the terminal efferent resistances for each sector in a manner which tends to make the calculated flow in the terminal efferent vessel match the measured primary input flow for each such sector". (See Charbel et al. claim 21 or claim 25; see also column 24, lines 25 - column 27, line 45, FIG. 30).

It is not seen that the secondary reference Okada et al. supplies the missing teachings to Charbel et al. to achieve or render obvious claim 1. Charbel et al. has been cited as teaching an ultrasonic measurement unit which emits an ultrasonic signal towards a blood vessel in a

HAYES SOLOWAY P.C.
3450 E. SUNRISE DRIVE,
SUITE 140
TUCSON, AZ 85718
TEL. 520.882.7623
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MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

human body to receive the reflected ultrasonic signal. Even assuming arguendo Okada et al. is as the Examiner characterizes this reference, it does not supply the more basic and essential features missing from the primary reference Charbel et al. as discussed above. Accordingly, it is submitted that no combination of Charbel et al. and Okada et al. could be said to achieve or render obvious claim 1.

Having dealt with all the objections raised by the Examiner, the Application is believed to be in order for allowance. Early and favorable action are respectfully requested.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account Number 08-1391.

Respectfully submitted,

Norman P. Soloway
Attorney for Applicants
Reg. No. 24,315

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on January 11, 2008, at Tucson, Arizona.

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HAYES SOLOWAY P.C.
3450 E. SUNRISE DRIVE,
SUITE 140
TUCSON, AZ 85718
TEL. 520.882.7623
FAX. 520.882.7643

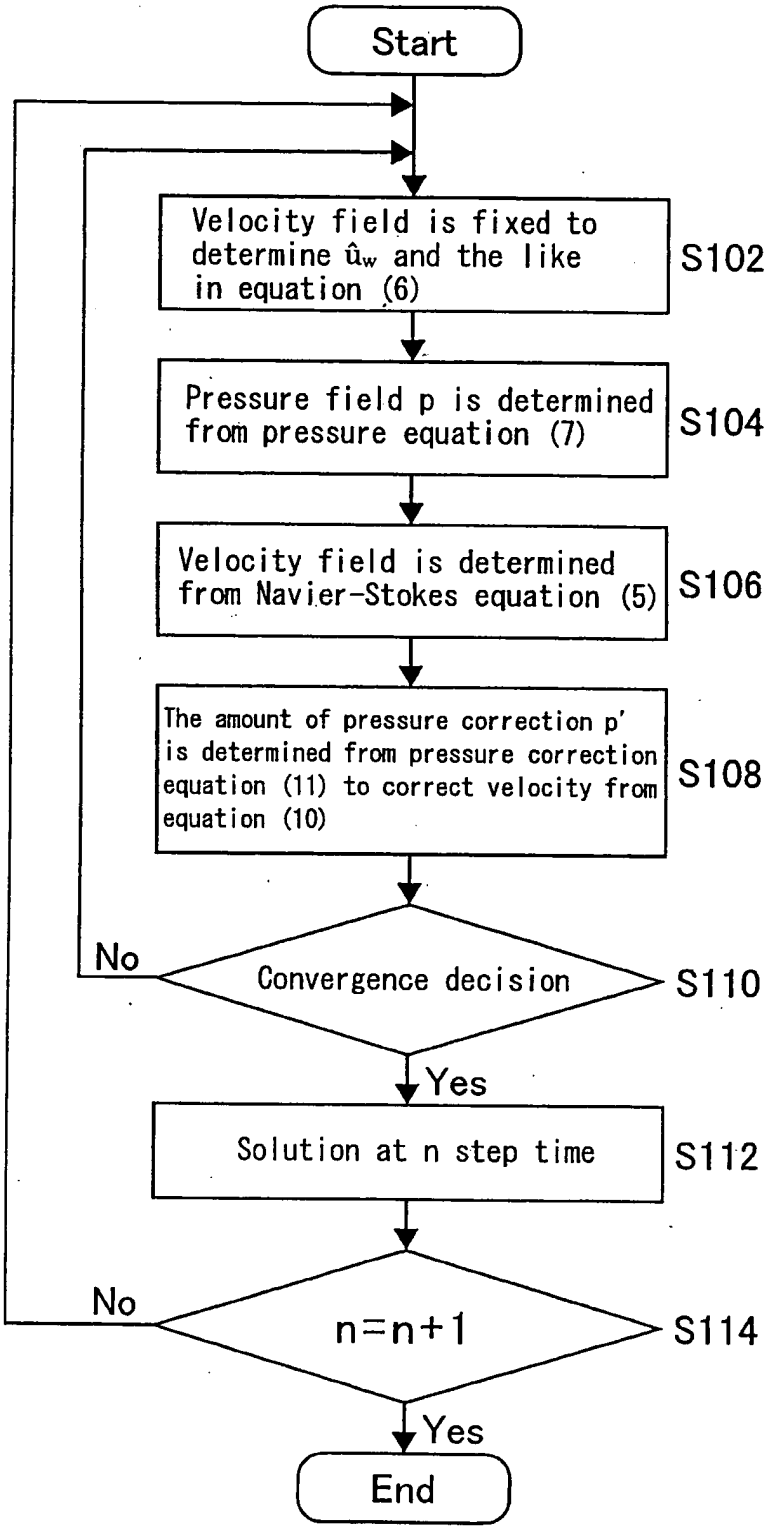
175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

Docket No. SHIG CPTA1402AU

Serial No. 10/527,140

Annotated Marked-up Drawings

Fig.1 - Prior Art



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Replacement Drawings